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ABSTRACT

A study evaluated the approach used for validation of job profiles for curriculum development in three health care programs in the Netherlands: dietetics, podotherapy, and activity therapy. It also evaluated the quality of these job profiles and the relation between process and product quality. The validation approach used was a practical application of a small group strategy that consisted of three parts: information, deliberation, and consensus. Data were used from three cases. In these cases, 12, 10, and 11 persons with health care institutions or educational institutions were present. Six questionnaires collected data on the following: (1) personal characteristics, motives and expectations, the information document, and the draft job profile; (2) opinions on issues and expected consensus; (3) communication rules; (4) the decision-making process; (5) consensus on components of and opinions on the quality of the validated job profile; and (6) evaluation of the validation approach. Findings indicated that the validation approach was satisfying. Although there was a considerable amount of prior agreement with the draft job profile components, the validation sessions created an even greater agreement with the final job profile components. The validation approach was also satisfying with regard to product quality. The process quality was scored less positively. The study showed that process and product quality were significantly related. (Appendixes include a list of 19 references and 5 data tables.) (YLB)

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Approving Job Profiles for Curriculum Profiles in Health-Care Programs. A Study on Process and Product Quality.

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Introduction.

The study is part of a project of the Dutch Institute for Curriculum Development. The main objective of the project is to create and validate job profiles for three health care education programs on dietetics, podotherapy, and activity therapy. These job profiles were meant for curriculum development and revision. Validation of job profiles for curriculum profiles is a key component in curriculum development and revision as all stakeholders in the educational program have to approve the job profile because this serves as the common basis for further curriculum development and revision. Acceptation of the final curriculum is largely depending on approval of the job profiles.

Choosing the appropriate validation strategy is therefore a critical issue in job profile validation for nationally based curriculum development, and of significant importance for all those who are engaged in the developent process. There are several strategies available, but empirical results of the effects of these strategies are largely unknown.

The objectives of this study are:

- to evaluate the approach that is employed for validation of job profiles for curriculum development in three health care programs;
- to evaluate the quality of the products that are validated;
- to test the relation between the process quality of the validation approach on the one hand and product quality of the job profiles that are validated on the other hand.

Theoretical framework.

Job profile validation for curriculum development or curriculum revision is an emerging component in curriculum development for vocational and professional education and training. In the sixties the classical approach was to perform large job surveys in order to determine the commonalities between job tasks in related job groups. Common tasks were grouped according to the results of cluster analyses and the curriculum was designed according to the structure of these task clusters. Examples of this approach can be found with Smith (1973; 1974) and Randhawa (1978).

In more recent approaches for curriculum development and revison for vocational and professional education and training, results of these job surveys play a more modest part as multiple perspectives on the data and the results can lead to divergent interpretations and consequently to totally different curricula. Furthermore, curriculum theoretical contributions of Tyler (1950), Taba (1962), Schwab (1971), Goodlad (1979), Tanner & Tanner (1980),

Beauchamp (1981), Walker (1990), and many others have indicated that curriculum development processes involve multiple data and justification resources. Therefore we contend that mixes of data collection strategies and heterogeneous group interpretations have to be employed to enhance the quality of the validation process. This calls for deliberative curriculum development in which all stakeholders are involved. They reflect on the current state of the art in the respective curriculum domain, and try to establish agreement on the curriculum that it at stake.

In this study we evaluated the approach that is employed for validation of three job profiles, the quality of these job profiles, and the relation between process and product quality. A job profile can be defined as *the structured set of duties and tasks that serves as a reference guide for curriculum development and revision in vocational and professional education and training*. The validation approach we used is a practical application of a small group stategy, described earlier by Frey (1982), Nijhof & Mulder (1989), Mulder & Thijsen (1990), Mulder & Te Brake (1990) and Mulder (1989; 1991). The approach consists of three parts: information, deliberation and consensus (see figure 1). Information is the result of an empirical front-end analysis that is documentented in a so-called information document, which is needed for prudent preparation of the validation session. Deliberation is an approach for decision making described by Schwab (1971) and Walker (1975) and many others. In our project it is aimed at establishing consensus on the job profiles.

Figure 1 about here

Professionals from the trade and the educational institutions for which the job profile is validated are invited for the validation meeting. The reason for this is that job profiles are interpreted differently from both sides, and clear understanding of these differences is crucial for the validation process.

Information provision for those engaged in the validation process has to be divergent, and conflicting sections, that may lead to different conclusions as to wether what will be the content and structure of the validated job profile, have to be highlighted to prevent the participants from reaching cosmetic consensus. Deliberation has to be focussed on sharing perspectives, opinions and arguments for and against given proposals for the job profile. This interaction process should lead to consensus on the job profile.

Data source, methods and techniques.

Data is used from three cases in which a job profile is approved. In these cases 12, 10 and 11 persons were present. They were either with health care institutions or with educational institutions.

Data is collected with six questionnaires on:

1. Personal characteristics, motives and expectations, the information document and the draft job profile.
2. Opinions on issues and expected consensus.
3. Communication rules.
4. The decision making process.
5. Consensus on components of and opinions on the quality of the validated job profile.
6. Evaluation of the validation approach.

Questionnaires 1 and 2 were completed some days before the validations sessions, questionnaire 3 at the beginning of the first session, 4 during the last session, and 5 and 6 within a week after the validation sessions.

The deliberative validation approach is evaluated for the amount of convergence of the opinions of participants on the six different components of the job profile. These components are:

- a brief description of the job;
- a description of task domains;
- a description of the basic structure of the task domains;
- an overview of (task domains) and job tasks;
- a desription of trends and developments;
- a match between job tasks and occupational sectors.

These components are evaluated twice. Once prior to the validation sessions, and once after these sessions. Participants are asked to rate the level of prior agreement with the job profile components on a five point scale (1 = strongly agree; 5 = strongly disagree), and to rate the level of group agreement established during the sessions on a seven point scale (1 = unanimity ; 7 = insurmountable controversy). To enable comparability between both measurement moments the two extreme positive and negative values of the second scale are recoded to one score, so scores 1 and 2 were taken together, as well as scores 6 and 7. Thus we created a five point scale, of perceived group agreement with the job profile that is validated during the sessions, for the seond measurement moment. The shift in agreement with the job profile components is determined by computing the means of the a priori and a posteriori agreement scores on the job profile components, as well as the mean difference

between the score moments. The magnitude of this shift shows the impact of the validation sessions on the job profile agreement.

To evaluate the quality of the products that are validated participants are asked to rate the components of the job profile on a seven point scale. This scale is converted to a five point scale by merging both two extreme values of the scale as described above. Means are computed for the whole job profile, as well as for the seperate components. The difference between the perceived product quality of the different cases is tested by a Kruskall-Wallis 1-way Anova test.

To test the process quality of the validation sessions questionnaire 4 on the decision making process is used. This questionnaire is developed and extensively described by Frey, Malliou, Langeheine & Horton-Krüger (1988). Suffices it here to say that this questionnaire consists of two parts; the first part is used in this study. It contains 32 Likert items, that represent 8 criteria of process quality. Each criterion is operationalized into four items, two of wich are formulated positively, and two negatively, whereas two required external observation, and two self-observation. The items are randomly distributed in the questionnaire. The negatively formulated items were recoded for data processing. Means for all participants, and by validation session are computed. A Kruskall-Wallis 1-way Anova test is performed on these means to test the differences of process quality between the three cases.

To test the relation between the process quality of the validation approach on the one hand and the perceived product quality of, and the agreement on the job profiles that are validated on the other hand, the mean process quality score is computed, as well as the mean quality and agreement score. These scores are ranked across the participants, and a Spearman rank-correlation test is performed.

Finally we performed a Spearman rank-correlation test between the perceived product agreement on the one hand with perceived product quality, individual prior agreement (with the draft job profile), and expected product agreement on the other hand.

Results.

Table 1 shows the results for the first research question. The mean prior agreement with the job profile components is 2.40 (sd = .45), the mean post agreement is 1.43 (sd = .48). The mean difference between the a priori and a posteriori agreement is 1.03 (sd = .40). Due to partial non-response this total mean difference is based on 25 of the 33 cases, which caused a minor deviance between the difference of the means of the pre and postscores on the one hand and the total mean difference on the other hand.

This means that the mean shift of opinions on job profile components due to the validation sessions is 1.03 point on the five point scale.

If we look at the different job profile components, we see a range of 2.09 (component 3) to 2.71 (component 1) for the pre-consensus scores, whereas we see a range of 1.24 (component 3) to 1.72 (component 6) for the post-consensus scores. The mean difference ranges from 1.32 (component 1) to .76 (component 5).
If we divide the range of the five point scale in five subranges of 1.0 - 1.5 (++), 1.5 - 2.5 (+), 2.5 - 3.5 (+/-), 3.5 - 4.5 (-), and 4.5 to 5.0 (--) for very positive, positive, neutral, negative, and very negative mean group scores, we see that a priori three job profile components were evaluated in the positive, and three in the neutral subrange, whereas a posteriori four components were evaluated in the very positive, and two in the positive subrange.

Table 2 about here.

The data show (see table 2) that the mean perceived quality of the job profile is 1.51 (sd = .57) on a scale ranging from 1 (= positive) to 5 (=negative). The mean perceived quality by job profile component varies from 1.33 for component 2 to 1.79 for component 6. If we again divide the range of the five point scale in five subranges that vary from very positive to very negative, we see that the mean scores of four components are falling in the very positive subrange, whereas two of the mean scores fall in the positive subrange.

Table 3 about here.

Table 3 shows that for case 1 the mean perceived product quality is 1.43 (sd = .50), for case 2 1.07 (sd = .16), and for case 3 1.97 (sd = .53). A Kruskall-Wallis 1-way Anova test of perceived product quality by case shows a Chi-Square of 16.47 (corrected for ties) (p = .0003).

Table 4 about here.

Table 4 shows the mean process quality of the validation sessions as determined with questionnaire 4. Accross the cases the mean process quality is 2.39 (sd = .22) on a scale ranging from 1 (= very positive) to 5 (= very negative). If we again take 2.50 as the demarcation point for the positive and negative subrange, we see that the total mean process quality falls in the positive subrange. The means by validation session (case 1 to 3) vary from 2.2 (case 2) to 2.6 (case 3). Cases 2 and 1 fall in the positive subrange, whereas case 3 falls in the neutral subrange. A Kruskall-Wallis 1-way Anova test showed a Chi-Square of 10.43 (corrected for ties, p = .0054).

The Spearman rank correlation coefficients for process quality and perceived product quality of the job profile is .65 (p = .000) and for process quality and agreement on the job profile this is .57 (p = .001).

Table 5 about here.

Table 5 shows rank correlations coefficients and significances of perceived group agreement with the final job profile (product agreement) on the one hand by perceived quality of the final job profile (product quality), individual agreement with the draft job profile (draft agreement), and expected agreement with the final job profile on the other hand. The correlation between product agreement and product quality is .86 (p = .000), between product agreement and draft agreement .66 (p = .000), and between product agreement and expected agreement .55 (p = .003).

Conclusions.

If we return to the objectives of this study, we can conclude that the validation approach is satisfying. Although there is a considerable amount of prior agreement with the draft job profile components, the validation sessions created an even greater agreement with the final job profile components. The mean gain in agreement appeared to be quite substantial: 1.03 points on a five point scale. The gain might have been greater even when there had been less prior agreement with the draft job profile components.

If we look at product quality of the job profile, the validation approach is also satisfying. Although the perceived quality of the job profile components varied significantly across the three cases (p = .0003), the mean quality appeared to be 1.51 on a five point scale, of which 1.0 is the maximum positive extreme. The variation between cases is 1.07 for case 2, and 1.97 for case 3. This implies a difference in variation of .90, but all means of the cases fall in the positive subrange of the scale, which in fact is also very satisfying.

The process quality of the validation approach is scored less positive; the mean across the cases is 2.39 on a five point scale (1 = positive extreme). There is a significant difference of process quality between the cases (p = .0054); cases 1 and 2 fall in the positive subrange, whereas case 3 is scored relatively less positive as it falls in the neutral subrange. We can conclude that the overall process quality across the cases is satisfying, but that case three scored below average. On the other hand the mean process quality score of cases 3 is 2.6 on the five point scale, which in fact is nearly positive, and far from negative (the demarcation point for negative means is 3.5).

The results show significant rank correlation coefficients between process quality and perceived product quality of the job profile (r_s = .65; p = .000), and agreement on the product, the final job profile that is approved during the validation sessions (r_s = .57; p = .001). This result confirms the study by Frey, Frei & Langeheine (1989) that curriculum development processes affect the resulting products, but also shows that there is a within-validation-approach variety of process quality.

Finally the results show that the rank correlation coefficients between the perceived group agreement with the final job profile on the one hand, and the perceived quality of the final job profile (r_s = .86), the individual agreement with the draft job profile (r_s = .66), and the a priori expected agreement of the group after the validation sessions (r_s = .55), all are significant.

On the basis of the results for the three cases we studied, we can conclude that process quality seems to be important for product quality, which in turn seems to be important for agreement with the final product. And if there is a considerable amount of preconsensus on the draft job profile, participants accept it as a valuable starting document, that can even be improved during the validation sessions, which also results in significant rank correlations between the agreement with the final product, and the agreement with the draft job profile, as well as with the expected agreement with the final job profile.

Discussion

Validated job profiles are important for curriculum content justification in vocational and professional education and training. Validation approaches are manifold, but effects of these approaches are hardly studied. This causes serious problems in nationally based curriculum development and revision in vocational and professional education and training. The pertinent question is: "What approaches result in valid job profiles?" This study shows that the approach that is used does result in valid job profiles. In this sense it is a contribution to curriculum theory for vocational and professional education and training.

The results showed that prior to the validation sessions, a considerable amount of preconsensus existed already. It is important to evaluate the level of preconsensus on draft products, as this is an important condition as to whether the validation sessions are necessary or not. But on the basis of this study we cannot conclude that positive effects also hold when there is only limited preconsensus or even controversy with respect to the job profile.

The study shows that process and product quality are significantly related, which implies that attention for validation processes is jusitified. More research is needed to test the relative weight of the components within the approach and contextual factors to explain the variation in quality of both processes and products.

In future studies participation effects have to be controlled by having the products of validation sessions evaluated by independant raters who were not involved in the validation process.
In future studies follow-up processes should also be analyzed: how were the job profiles interpreted by users? How were they used? With what results? How did they enhance (or perhaps frustrate) the curriculum development or revision process? Do job profiles control the content of tests?

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Figure 1 Components of the validation approach

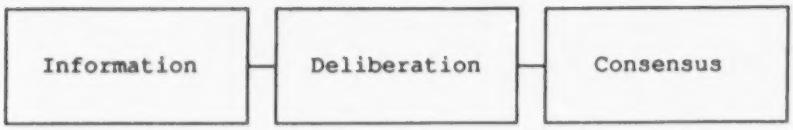

Table 1 Mean scores on the individual (Ind) agreement (agreem) prior to the validation sessions and perceived group agreement on components (comp) of the job profiles after the validation sessions (range 1 = positive; 5 = negative), mean difference scores (D1 to D6), and total mean difference (MDtotal).

Variable	Mean	Std Dev	N	Label
MPREAGR	2.40	.45	26	Mean pre agreement
MPOSAGR	1.43	.48	32	Mean post agreement
MDTotal	1.03	.40	25	Mean total difference
VR11II	2.71	.90	31	Ind agreem comp 1
VR1AV	1.39	.70	33	Group agreem comp 1
D1	1.32	1.01	31	Difference comp 1
VR21II	2.33	.65	33	Ind agreem comp 2
VR2AV	1.27	.67	33	Group agreem comp 2
D2	1.06	.97	33	Difference comp 2
VR31II	2.09	.39	32	Ind agreem comp 3
VR3AV	1.24	.44	33	Group agreem comp 3
D3	.88	.49	32	Difference comp 3
VR41II	2.55	.68	31	Ind agreem comp 4
VR4AV	1.33	.65	33	Group agreem comp 4
D4	1.26	.77	31	Difference comp 4
VR51II	2.30	.59	33	Ind agreem comp 5
VR5AV	1.55	.79	33	Group agreem comp 5
D5	.76	.90	33	Difference comp 5
VR61II	2.52	.69	29	Ind agreem comp 6
VR6AV	1.72	.96	32	Group agreem comp 6
D6	.79	.92	28	Difference comp 6

Table 2 Mean quality perceptions (qual) by job profile component (comp).

Variable	Mean	Std Dev	N	Label
Total	1.51	.57	31	Total qual
VR1BV	1.36	.74	33	Qual comp 1
VR2BV	1.33	.69	33	Qual comp 2
VR3BV	1.36	.65	33	Qual comp 3
VR4BV	1.36	.60	33	Qual comp 4
VR5BV	1.77	.92	31	Qual comp 5
VR6BV	1.79	1.08	33	Qual comp 6

Table 3. Mean quality perceptions of job profile by cases.

Variable	Value Label	Mean	Std Dev	Cases
For Entire Population		1.5054	.5668	31
CONF	case 1	1.4333	.5043	10
CONF	case 2	1.0667	.1610	10
CONF	case 3	1.9697	.5261	11

Table 4. Means on process quality (1 = very positive; 5 = very negative) by cases.

Variable	Value	Label	Mean	Std Dev	Cases
For Entire Population			2.3895	.2220	28
CONF	case 1		2.4403	.2080	11
CONF	case 2		2.2188	.1458	10
CONF	case 3		2.5536	.1820	7

Table 5. Rank correlations coefficients and significances of perceived group agreement with the final job profile (RPRODAGR) by perceived quality of the final job profile (RPRODQUAL), individual agreement with draft job profile (RINDAGR), and expected agreement on the final job profile (REXPAGR).

Correlations:	RPRODQUA	RINDAGR	REXPAGR
RPRODAGR	.8572	.6583	.5455
	(24)	(24)	(24)
	P = .000	P = .000	P = .003

(Coefficient / (Cases) / 1-tailed Significance)